

SEARCH FOR THREE-BODY FORCE EFFECTS IN NEUTRON-DEUTERON SCATTERING AT 95 MeV

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Three-nucleon (3N) forces as they are understood today should have a measurable effect on the minimum of the angular distribution in elastic nucleon-deuteron scattering at intermediate energies. Neutron-deuteron (nd) elastic scattering is a more reliable test than proton-deuteron scattering because the absence of Coulomb effects allows a less ambiguous interpretation of the results. The nd scattering differential cross section at 95 MeV has been measured with the Medley experimental setup, using the neutron beam line of The Svedberg Laboratory, Uppsala. Recoil deuterons from a thin CD₂ target have been counted by telescopes at various angles, allowing a full angular distribution coverage. The neutron-proton differential cross section has also been determined and used for the absolute normalization. The results are compared with calculations of nucleon-nucleon interactions and can be perfectly described if 3N forces are included.